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at the same time and was said to belong to the same group of objects mentioned above, as received from the descendants of Nesahualcoyotl. Above the lock on the lid is the head of a Mexican lion in silver. The silver lock is in the form of the same type of double-headed crowned bird as is represented on the bandeja. A careful study of all the facts must lead one to assign the late seventeenth or early eighteenth century as the probable date of the object.

A smaller tray, or platter, of painted and varnished, or crudely lacquered, wood, but possibly of Spanish manufacture, has been recently acquired by the Museum. While it widely differs in art and technique from the above described Mexican bandeja, it may be grouped in the same general class. This specimen measures twenty inches in diameter and is hollowed to a depth of two and a half inches. A thick coating of paint and varnish is spread over the wood, and on this an incised decoration is executed. In the centre the decoration is of brown and black Moorish design, representing the well-known decoration on wooden furniture inlaid with ivory (or pearl) so common in the bazaars of the East. Around this is a border of incised lace, probably representing the famous Point de Genes, so fashionable in the seventeenth century, and at that time a widespread article of trade. At least the style and pattern represented on the tray bear a close resemblance to the lace reproduced in Mrs. Palliser's *History of Lace* (p. 248) as trimming a broad collar which is said to have belonged to Gustavus Adolphus, and is in her collection. This would tend to place this object also toward the middle of the seventeenth century, when the lace was so much in vogue. Around the rim of the platter are stiff carnations alternately painted cream and orange-red. The reverse of the tray is yellow. While the interior of this tray does not show traces of gouging, as does the Mexican platter, the under side is rougher and betrays the tool. The design, however, is incised instead of being simply laid on, and it possesses none of that barbaric splendor so characteristic of the Mexican bandeja. On the other hand, its decorative motives reveal the characteristics of Spanish industrial art, which so often exhibits a blending of European and Moorish traditions and models.

S. Y. S.

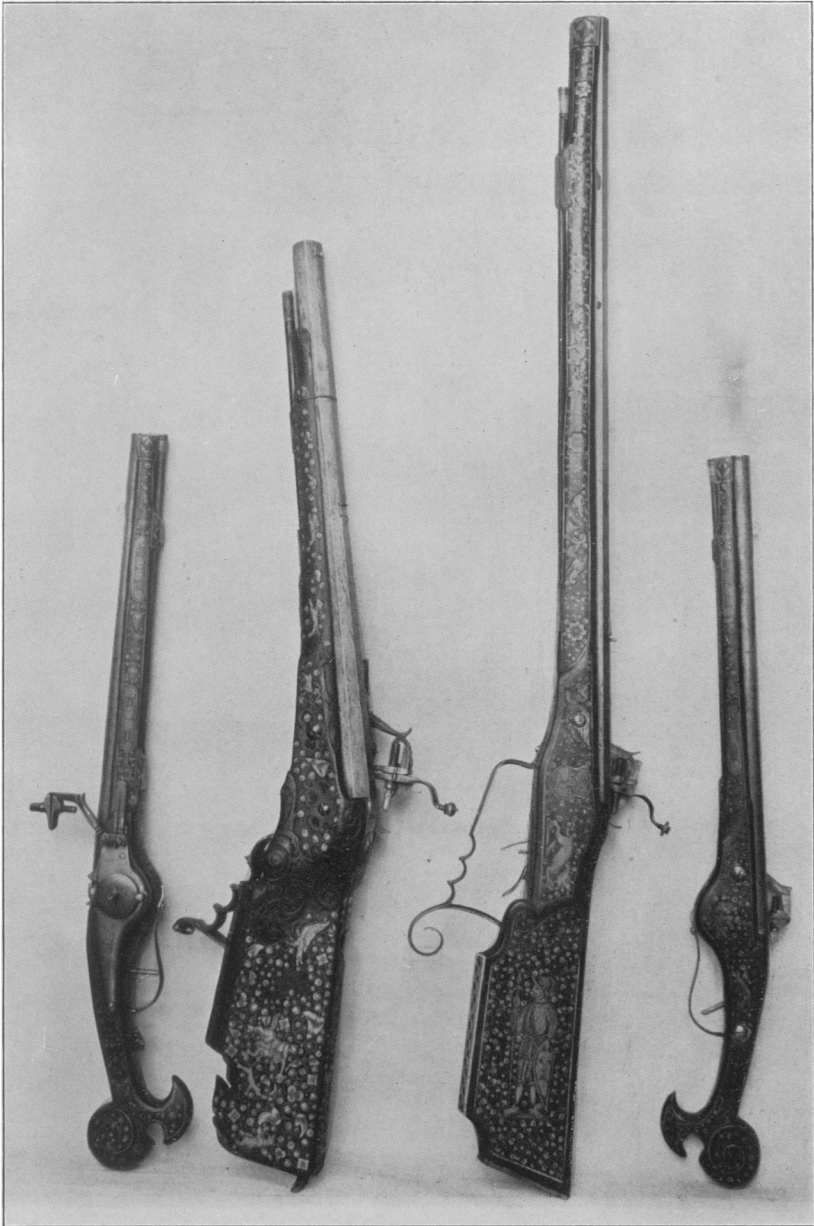


WHEEL-LOCK GUNS AND PISTOLS

Two wheel-lock arquebuses and a pair of pistols lately acquired by the Pennsylvania Museum and School of Industrial Art are excellent examples of early portable fire arms. They probably date about the commencement of the seventeenth century, and are apparently of German origin.

Like most ancient weapons the exact origin of the arquebus* (or harquebus as it is sometimes spelt) still remains in doubt, but it probably made its appearance during the latter half of the fifteenth century, as we know that the Swiss employed it at the battle of Morat in 1476. In England, a little later, a portion of the Yeomen of the Guard, just then established, were armed with it. The French, however, appear to have been late in adopting it, for it does not seem

* Arquebus from the Italian *arca-bouza*, corrupted from *bocca*, which signified a bow with a mouth, or as Sir Sibbald Scott thinks from the Dutch *bus*, the barrel of a gun.



INLAID WHEEL-LOCK GUNS AND PISTOLS

to have been used by them until after 1520, though Henry VIII. appeared at the Field of the Cloth of Gold with a body of Arquebusiers.

The barrel of the arquebus was either rifled or smooth bore and varied in length according to the size of the weapon, the larger ones (Arquebus a Croc) being used as wall pieces fixed on swivels, as Grose says, to fire through loop holes.

The stock of the earlier arquebus was straight, somewhat resembling that of the cross bow, but as this prevented a perfect aim from being taken when fired from the chest, it was later curved down so as to elevate the barrel while the horizontal position would be retained. This improvement originated with the Germans, and was termed by the English a hagbut or hakbut, from the German word Hake, a hook, the smaller variety being called Demihags. Sir Sibbald Scott says that the English made use of mounted hagbutters in the expedition to Scotland under the Protector Somerset, and further that Edward VI. in his journal says: "My Lord of Warwick was almost taken chasing the Earl of Huntly, but he was rescued by one Bertivelli, with 12 hagbutters on horseback." Patten, describing the same expedition, says: "Of hakbutters have they few or none."

The first arquebus was furnished with a match-lock, but it was later superseded by the wheel-lock, which was a great improvement over the old form. The wheel-lock is probably a German invention, and is generally thought to have been first made in Nuremberg early in the sixteenth century. *Sir Samuel Rush Meyrick, however, is of the opinion that it is of Italian origin, and in support of this opinion says that "according to M. de Bellai one of the first occasions on which it was used was in the year 1521 when Pope Leo X. and Charles V. confederated against France, and their troops besieged Parma, which was defended by the Marquis de Foix." He further says, "It might be supposed that this novelty would be at once communicated to the Germans, but Luigi Collado in his treatise on Artillery, printed in Venice in 1586, says that they only began in his time to use the wheel-lock in Germany."

The wheel-lock was an ingenious as well as efficient sort of lock. It consisted of a furrowed wheel of steel attached to an axle which passed through and projected beyond the lock-plate. The outer part of the axle was square to fit a key, or as it was called a "spanner," and a chain and strong spring was attached to it, the wheel being held by a catch connected with a trigger. A piece of iron pyrites or fire-stone was grasped between the jaws of the cock-head which was placed in the reverse position to the more modern flint-lock, and a pan with a sliding cover protected the priming powder. By turning the axle with the spanner the spring was wound up. The cock was then brought down on the pan cover. By pulling the trigger the wheel was released, and revolving rapidly the axle shoulder shot back the cover of the pan and grated against the pyrites, igniting the priming powder and firing the charge.

In some of these locks there is an ingenious device by which the wheel wound itself when the cock was drawn back, thus dispensing with the spanner.

* Meyrick's Critical Inquiry into Armour, Vol. 2, page 295.

One of the earliest examples of the wheel-lock is in the Prichett collection and bears date 1509 with the gunsmith's mark. It is furnished with two cocks, so that if one piece of pyrites should break the other could be used.

The arquebus was frequently supported on a forked stand, called a *fourquine*, furnished with a spike to steady it in the ground. The length of this stand was regulated according to the height of the man who used it. When marching it was carried in the hand, and subsequently hung upon the wrist by a cord or loop tied under its head.

During the sixteenth and seventeenth centuries portable fire arms, like every offensive weapon, became the vehicle for elaborate decoration, and the museums and private collections abound with remarkable and admirable examples of what may be called the gunsmith's art. The barrels, locks and triggers, in fact all the metal work or mounts of these weapons, were frequently chased, engraved or inlaid with precious metals in beautiful designs, and the stocks, made of ebony, pearl, medlar or other woods, were inlaid with ivory, stag's-horn or mother-of-pearl in various devices, as animals, birds, foliage, flowers or human figures, sometimes almost entirely covering the woodwork of the weapon.

It was during these centuries that Italy became celebrated for its manufacture of portable fire arms, the best arquebuses, according to Brantome, being made at Milan, while the names of Lazarino Cominazzi, Lazaro Lazarino, Badile, Colombo, Giocatani and others are well known to all collectors of these weapons for their grace and beauty of decoration.

The larger of the two wheel-lock arquebuses just secured by the Museum measures three feet five inches in length, the barrel being twenty-eight inches. The stock is of dark wood and covered with vines, scrolls, conventional flowers and heads of animals inlaid in bone. On the butt is a knight in a cap-a-pied suit of armor, and an escutcheon with heraldic designs. The lock-plate is etched with a boar hunt. The barrel is etched with arabesque scrolls. The wheel is on the exterior.

The stock of the smaller arquebus measures two feet eight inches in length, the barrel being twenty inches, and is also of dark wood, profusely inlaid with polished and engraved stag's-horn. It has a depression for the thumb of the left hand to rest in when the weapon is held at the shoulder for firing. The design comprises vines and hunting scenes. The barrel is octagonal and rifled. The lock-plate is plain and has the wheel on the exterior.

The two wheel-lock pistols measure twenty-five inches, the barrel measuring sixteen and a half inches. The stock is of dark wood with pommels in form of volutes. The groundwork is covered with scrolls, animals and flowers; the lock-plate, having the wheel on the exterior, is decorated with fine scroll etching.

C. S.

